GREPECAS PROJECT B1

B1	PROJECT DESCRIPTION	CAR/SAM Air Navigation Operational Efficiency Programme	
ICAO Coordinators: ATM Officers NACC and SAM	**Project Title**	**Start date**	**End date**
Project Leaders: **- Julio Cesar de Souza Pereira (IATA)** **- Riaaz Mohammed (Trinidad and Tobago)** **- Sergio Kebach (Brasil)**	**NEOSPACE-01: Increasing Efficiency and capacity; Implementation of Improved operations through enhanced en-route trajectories (FRTO) and Improve arrival and departure operations (APTA)**	**Ene 2024**	**Dec 2027**
Objectives	Recognizing the current progress of implementation activities for certain elements of the APTA and FRTO modules of the GANP1, it is required: a) Support and reorient the optimization of the airspace structure of the CAR/SAM Region in a harmonized and coherent manner, strengthening ongoing implementations. b) Promote the activities of the States and CAR/SAM organizations for the effective implementation of Volume III of the ANP CAR/SAM. c) Generate environmental benefits by saving fuel and reducing CO2 emissions.		
Scope	✓ Initiate and/or reinforce the implementation of selected elements of the GANP FRTO module: a) to increase performance in the area 'Efficiency', in the focal areas; flight time, distance and vertical flight, focusing on fuel savings and CO2 emissions; and b) to increase performance in the area 'Safety', in specific objectives of avoiding deviations in lateral/horizontal navigation and improving the early detection of conflicting ATC authorizations. ✓ Initiate and/or reinforce the implementation of selected elements of the GANP APTA module (Approach, SID/STAR, CDO and CCO) to increase performance in the area 'Capacity', in the focal areas, capacity, performance and utilization. ✓ Evaluate and implement the necessary CNS/ATM enablers to FRTO and APTA ✓ Optimize longitudinal separation in continental space, to increase performance in the Efficiency and Capacity area.		

[1] *See GANP portal: https://www4.icao.int/ganpportal/. Note that the 42nd ICAO Assembly approved the Eighth Edition of the GANP. This project will be updated accordingly.*

<table>
<tr><td>Justification</td><td>

GREPECAS/20 identified that activities in the CAR/SAM region are advancing together with the industry, and harmonization between them should begin as soon as possible. It was agreed that these initiatives should be grouped under a single GREPECAS Program, to develop in a harmonized and interoperable manner the concepts for the optimization of airspace that cover, in addition to PBN implementation, several modules/operational elements of the GANP.
This project focuses on the key performance areas (KPA) Capacity, Efficiency and Safety in order to reduce the gap between the actual flight path and the optimal trajectory desired by users. Likewise, implement routes and instrument flight procedures that increase the airport's arrival ratio and increase accessibility to the airport, while ensuring operational safety.
The project supports the optimization of the airspace structure of CAR/SAM regions that is in progress since the beginning of the implementation of the APTA module in 2013, as well as the implementation of the FRTO module that was initiated through several initiatives in CAR and SAM after the pandemic period, with a view to supporting the recovery and sustainability of the Industry, as well as restoring air connectivity.
✓ At the same time, the effective implementation of Volume III of the ANP CAR/SAM is promoted.

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<tr><td>Supporting metrics</td><td>

✓ Number of SID/STAR PBN routes implemented, where required for International Airports (Application of CCO and CDO techniques)
✓ Number of RNAV/RNP routes implemented (new routes/improved navigation specification/replacement of conventional routes).
✓ Number of Flight Information Regions that have implemented strategic direct routing (SDR). Volume of airspace implemented.
✓ Number of Flight Information Regions that have implemented Free Route Airspace (FRA). Volume of airspace implemented.
✓ Number of routes preferred by the UPR user implemented.
✓ Percentage of thresholds with APV approaches in International Airports.
✓ Reduction of fuel consumption and CO2 emissions
✓ Other metrics that are applicable.
✓

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<tr><td>GANP Key performance indicators (KPI)</td><td>

According to the project planning, FRTO and APTA elements and respective KPI indicators (GANP and Doc. 9883 performance-based planning process) will be selected. Performance improvement targets require the definition of a baseline for KPIs. From this baseline, it is feasible to establish performance improvement ambitions for a given KPI, within a defined period.
Proposed project KPIs are shown below (States/Organizations, according to their needs, can calculate/monitor other GANP KPIs or develop their own indicators)

<table>
<tr><th>APTA MODULE</th><th>FRTO MODULE</th></tr>
<tr><td>Basic Indicator - Capacity
KPI 10 – Airport peak throughput
Advanced Indicators - Efficiency
KPI 17 – Level-off during climb
KPI 19 - Level-off during descent</td><td>Basic Indicators - Efficiency
KPI 04 – Filed flight plan En-route extension.
KPI 05 – Actual en-route Extension
Basic Indicators – Safety
KPI20 – Number of aircraft accidents</td></tr>
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		KPI23 – Number of airprox events/TCAS alerts/separation loss/mid-air near collision/mid-air collision (MAC) **Advanced Indicators - Efficiency** KPI 17 – Level-off during climb KPI 19 - Level-off during descent **Advanced Indicator – Capacity** KPI 06 – En-route Airspace capacity
Resources Needed	• Teleconferences that require 40 man-hours per month. For the remaining life cycle totals 960 man-hours	
Main risks identified	• Lack of interest in the project. Low participation of States in project activities. Reluctance or delays to the effective implementation of changes in airspace, including publication in AIP. • Scarcity of economic resources. • Lack of technical knowledge. • Lack of Industry Support	

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TABLE OF ACTIVITIES

1. FRTO CAR SAM PLANNING AND IMPLEMENTATION ACTIVITIES (REFERENCE ONLY)

Activity	Responsible	Start date	End date	Status	Comments
1. Documentation					
1.1. Develop Version 2 FRTO Implementation Guide					
1.2. Produce CONOPS FRA CAR/SAM					
1.3. Set a target for SDR and FRA implementation in the next 5 years					
1.4. Develop and disseminate national FRTO implementation strategy					
1.5. Studies on FPL/AIDC in an SDR and FRA environment					
2. FRTO Publication					
2.1. Review aeronautical publication model for UPR, SDR and FRA implementation					
2.2. Harmonize UPR, DTS and FRA publications					
3. CNS Infrastructure					
3.1. Evaluate the implementation status of the requirements for implementation FRTO B0/1 and B1/1 (ATS Surveillance Coverage, VHF Coverage, MTCD, Trajectory Monitoring)					
3.2. Perform FPL processing tests for SDR and FRA cross-border environments with and without "floating points". Check for interference with AIDC					

Activity	Responsible	Start date	End date	Status	Comments
4. Support Metrics and Key Performance Indicators					
4.1. Set support metrics					
4.2. Develop interactive maps with SDR and FRA airspaces					
4.3. Establish key performance indicators.					
4.4. To verify the feasibility of implementing the methodology used in Brazil					
5. Longitudinal separation between aircraft					
5.1. Track the Implementation Status of longitudinal separation with a view to achieving 30/10NM separation					

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2A. APTA PLANNING AND IMPLEMENTATION ACTIVITIES IN SAM REGION (REFERENCE ONLY)

Activity	Responsible	Start Date	End Date	Status	Comments
1. Review of the APTA Implementation Roadmap in the SAM Region					
1.1. Review the Operational Concept Capacity and Efficiency	SAMIG/GESEA	2026	2028	Not started	
1.2. Review of the PBN Roadmap	SAMIG/GESEA	2026	2028	Not started	
1.3. Prepare an APTA Roadmap. Document integration	SAMIG/GESEA	2026	2028	Not started	
1.4.					
1.5.					
1.6.					
1.7.					
1.8.					

Activity	Responsible	Start Date	End Date	Status	Comments
1.9.					
1.10.					
1.11.					

2B. APTA PLANNING AND IMPLEMENTATION ACTIVITIES IN CAR REGION (REFERENCE ONLY)

Activity	Responsible	Start Date	End Date	Status	Comments
1.					
1.1.					
1.2.					
1.3.					
1.4.					
1.5.					
1.6.					
1.7.					